(3) Removing or otherwise disposing of road-surfacing materials that are incompatible with the postmining land use and revegetation requirements;

(4) Reshaping cut and fill slopes as necessary to be compatible with the postmining land use and to complement the natural drainage pattern of the surrounding terrain;

(5) Protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion; and

(6) Scarifying or ripping the roadbed; replacing topsoil or substitute material, and revegetating disturbed surfaces in accordance with §§ 816.22 and 816.111 through 816.116 of this chapter.

[53 FR 45212, Nov. 8, 1988]

§ 816.151 Primary roads.

Primary roads shall meet the requirements of section 816.150 and the additional requirements of this section.

(a) *Certification.* The construction or reconstruction of primary roads shall be certified in a report to the regulatory authority by a qualified registered professional engineer, or in any State which authorizes land surveyors to certify the construction or reconstruction of primary roads, a qualified registered professional land surveyor with experience in the design and construction of roads. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan.

(b) *Safety Factor.* Each primary road embankment shall have a minimum static factor of 1.3 or meet the requirements established under § 780.37(c) of this chapter.

(c) *Location.* (1) To minimize erosion, a primary road shall be located, insofar as is practicable, on the most stable available surface.

(2) Fords or perennial or intermittent streams by primary roads are prohibited unless they are specifically approved by the regulatory authority as temporary routes during periods of road construction.

(d) *Drainage control.* In accordance with the approved plan—

(1) Each primary road shall be constructed or reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to bridges, ditches, cross drains, and ditch relief drains. The drainage control system shall be designed to safely pass the peak runoff from a 10-year, 6-hour precipitation event, or greater event as specified by the regulatory authority;

(2) Drainage pipes and culverts shall be installed as designed, and maintained in a free and operating condition and to prevent or control erosion at inlets and outlets;

(3) Drainage ditches shall be constructed and maintained to prevent uncontrolled drainage over the road surface and embankment;

(4) Culverts shall be installed and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road;

(5) Natural stream channels shall not be altered or relocated without the prior approval of the regulatory authority in accordance with applicable § 816.41 through 816.43 and 816.57 of this chapter; and

(6) Except as provided in paragraph (c)(2) of this section, structures for perennial or intermittent stream channel crossings shall be made using bridges, culverts, low-water crossings, or other structures designed, constructed, and maintained using current, prudent engineering practices. The regulatory authority shall ensure that low-water crossings are designed, constructed, and maintained to prevent erosion of the structure or streambed and additional contributions of suspended solids to steamflow.

(e) *Surfacing.* Primary roads shall be surfaced with material approved by the regulatory authority as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

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§ 816.180 Utility installations.

All surface coal mining operations shall be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells; oil, gas, and coal-slurry pipelines; railroads; electric and telephone lines; and water and sewage lines which pass over, under, or